Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

do ourselves an injury in research by assuming mere incidental uses as the main purposes for which structures seem to be "adapted."

One of these uses in the spines of cactus has occurred to me after reading Dr. Newberry's remarks on *Pinus edulis* in the last number. They break the full force of the sun on the plant, a force it is made to endure and not to love, as we know who have learned to cultivate it. Plant lovers set out their treasures in summer under "arbors" of fish-netting or galvanized wire, and those who have no experience would be surprised to find how the moving shadows of the twine or wire lowers the temperature. A mass of spines on a cactus must certainly have the same effect. A cactus does not need much light on its epiderm to keep healthy. On the dry mesas along the Uncompahgre River I have seen some aggregated masses of *Echinocactus phœniceus* forming dense hemispheres a foot high and as much wide, with spines so thoroughly interlaced with spines as to rival the hedgehog, and leaving not a particle of the green surface visible; and there are species not cæspitose, such as *E. pectinatus*, which no one can see for spines without cutting apart, and forming a complete protection from the hot suns under which they are doomed to live.

I do not suppose I have yet reached the final purpose of spines in a cactus any more than we have the final purpose in the existence of the cactus itself, but that one use of cactus spines is to furnish a partial shade I feel to be beyond a doubt.

THOMAS MEEHAN.

Gyalecta lamprospora, Nyl.—In a recent number of the *Regensburg Flora*, Dr. Nylander, of Paris, has described a lichen sent him by me as follows: "Thallus white, opaque, thin; apothecia becoming black, superficial,opaque, subrugulose, about 0.5$^{mm.}$ or less in diameter; spores 8, without color, narrowly oblong, muriform-divided 0.100–110$^{mm.}$ long, 0.010–11 broad, in the middle somewhat constricted, paraphyses slender, the epithecium, with the perithecium and the lower stratum of the hypothecium, dark colored. Reaction with iodine fulvous red. On unknown exotic bark. A marked species of a distinct type. Thallus not corticate, all its elements, with the conceptacle of the apothecia, fulvous red; the scanty and confusedly cellular portion reacting similarly. Gonidia mostly chroolepid, connected, medium-sized and emitting lichenose hyphoid filaments. Younger apothecia obtusely margined, with an impressed disk. Thekes pyriform, long stipitate below, spermatia bowed, about 0.018$^{mm.}$ long."

To this description Dr. Nylander adds: "We have distinctly seen each gonidium, and even young gonidia, of this lichen emit from its walls one and even two filaments, characteristically lichenose. It is perfectly evident that these productions are lichenose, and continuations of the wall of the gonidium. What then becomes of 'symbiosis'? for where is here the 'fungus' and where the 'alga'? In the lichen there exist only lichenose elements, as is everywhere demonstrated."

This lichen was sent me by Dr. J. W. Eckfeldt as having been collected near Philadelphia, without further indication. But the evidently exotic nature of the wood and the fact that two distinctly tropical lichens, a *Pyrenula* and a *Chiodecton*, grew on the same substrate, show that it does not properly belong to the flora of the region where it was found.

H. WILLEY.

Arthrocladia villosa, Duby, at Woods Holl., Mass.—A number of specimens of the above-named alga was collected by me during July and August, 1884. As the Rev. A. B. Hervey has examined a specimen, there can be no doubt as to the identification.

Prof. W. G. Farlow puts *Arthrocladia villosa* into Addenda, p. 183, Marine Algæ of New England, upon the authority of specimens found by Mr. Frank S. Collins at Falmouth Heights. In TORREY BULLETIN, Vol. x., No. 9, p. 106, it is stated that Mr. Geo. W. Perry found specimens also at Menanhant, near Falmouth.

My find is hence (so far as I know) the third one, and the locality is the most southern one yet reported.

JOHN E. PETERS.

Fertilization in Arenaria serpyllifolia.—Those who are continually noting and recording adaptations for cross-fertilization in flowers are to my mind engaged in a useful work. Still, I often wonder why they miss the opposite illustrations. The common weed *Arenaria serpyllifolia* affords a neat instance of behavior, that results in securing self-fertilization. The flower is at its best state of expansion about 8 or 9 in the morning in this region. Examined with a lens it will be found that the three pistils, in expanding, have curved horizontally to the east. In rotating, the stigmatic apex of the pistil catches every one its anther, and holds and retains it to the end. About the hour named, when the flowers are expanded, the pollen may be seen oozing from its cells and completely covering the stigma. The stamens of the outer tier mature pollen later, if indeed they have any at all, for I have never seen any that I thought truly polleniferous. I have examined many flowers but never found a pistil that had not caught its anther and received pollen in the way described.

THOMAS MEEHAN.

Notes from Kansas.—In the Forest Trees of North America, *Rhamnus Caroliniana*, Walter, is mentioned as found in Eastern Kansas. I have not seen it, but *R. lanceolata*, Ph., is quite common here. *Sapindus marginatus*, Willd., grows in Southern Kansas, but it is not credited to this State in the Forest Trees of North America. The writer spent a few days in Southeastern Kansas, Indian Territory, and Southwestern Missouri the latter part of June, and collected *Lechea Drummondii*, T. & G., *Callirrhoe digitata*, Nutt., *Œnothera linifolia*, Nutt., *Galium pilosum*, Ait., in Kansas (not reported from the State before), *Marshallia cæspitosa*, Nutt., not found heretofore within our borders. I expect to take a trip west before long to see what I can find, that I may have something of much interest to exchange.

Paola, Kansas. J. H. OYSTER.